21. (New) A secondary battery electrode according to Claim 1, wherein the carbon-carbon composite material is non-vitreous.

A3 Cont.

22. (New) A secondary battery electrode according to Claim 10, wherein the carbon-carbon composite material is non-vitreous.

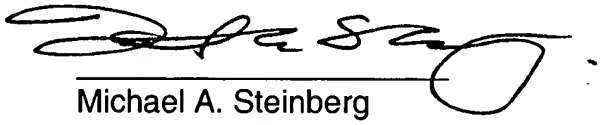
REMARKS

This amendment is made to place the application in better condition for examination. Applicants respectfully urge that the claimed invention is in condition for allowance and request early notification to that effect.

In the event this paper is not timely filed, Applicants hereby petition for an appropriate extension of time. The fee for this extension may be charged to our Deposit Account No. 01-2300, along with any other additional fees which may be required with respect to this paper.

Please charge any fee deficiency or credit any overpayment to Deposit Account No. 01-2300.

Respectfully submitted,



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MARKED- UP COPY OF THE SPECIFICATION

Please replace the first paragraph on page 3 with the following paragraph:

--The vapor-phase growth carbon fibers used to make the electrode of the present invention may be obtained as follows. A raw material is a hydrocarbon compound selected from aromatic hydrocarbons such as toluene, benzene, and naphthalene; and aliphatic hydrocarbons such as propane, ethane, and ethylene. A preferable raw material is benzene or naphthalene. The raw material is first gasified, and is introduced with a carrier gas for example of hydrogen, carbon dioxide, or carbon monoxide to a reaction zone heated at 900-1500 °C. The raw material is then made in contact with a catalyst made of a super fine metal in the reaction zone at 900-1500 °C. Examples of the catalyst are [ion] iron, nickel, and [ion-nickel] iron-nickel alloy in particle diameter of 100-300 angstroms. Upon the contact, the raw material is thermally decomposed to form vapor-phase growth carbon fibers.--

MARKED- UP COPY OF THE CLAIMS

1. (Amended) A porous secondary battery electrode made of [a] an electrode material of a carbon-carbon composite material in which 30-90 wt% of the carbon-carbon composite material are vapor-phase growth carbon fibers [are] uniformly dispersed in a carbon matrix, the vapor-phase growth carbon fibers having a diameter of 0.01-0.5 μm and a length of 5-300 μm.

2. (Amended) A secondary battery electrode according to Claim 1, wherein said vapor-phase growth carbon fibers are subjected to graphitization at a temperature of 2000°C or above.

5. (Amended) A secondary battery electrode according to Claim 1, wherein said vapor-phase growth carbon fibers is further limited to 50-80 weight % of the carbon-carbon composite material [a formulation amount of said vapor-phase growth carbon fibers is 50-80 weight %].

6. (Amended) A secondary battery electrode according to Claim 1, wherein said carbon-carbon composite material is subjected to graphitization at a temperature of 2000°C or above.

7. (Twice Amended) A method for producing the porous secondary battery electrode as set forth in claim 1, comprising:

intermixing a synthetic resin with said vapor-phase growth carbon fibers having a diameter of 0.01-0.5 μm and a length of 5-300 μm, wherein the vapor-phase growth carbon fibers are uniformly dispersed in said synthetic resin to obtain a mixture;[;]

molding said mixture into a predetermined shape to [obtain a] form an intermediate molded product; and

heating said intermediate molded product at [high temperature to convert it into] a heating speed of 1 °C to 10°C/min to turn it into a non-vitreous, porous carbon-carbon composite.

8. (Amended) A method for producing the secondary battery electrode according to Claim 7, further comprising a step of graphitizing at a temperature of 2000°C or above said vapor phase growth carbon fibers prior to intermixing with a synthetic resin.

9. (Amended) A method for producing the secondary battery electrode according to Claim 7, wherein said heating step at high temperature includes two steps of carbonization at the proximity of 1000°C and graphitization at a temperature of 2000°C or above [and graphitization].

10. (Amended) A secondary battery comprising:

[a positive] the electrode [formed of the electrode] as set forth in Claim 1 as a positive electrode;

a negative electrode; and

an electrolyte into which said positive electrode and said negative electrode are immersed.

11. (Amended) A secondary battery according to Claim 10, wherein said negative electrode is made of a carbon-carbon composite material in which vapor-phase growth carbon fibers are uniformly dispersed in a carbon matrix.

12. (Amended) A secondary battery according to Claim 10, wherein said negative electrode is a metal lithium plate.

13. (Amended) A secondary battery according to Claim 10, wherein said battery is a lithium secondary battery.

14. (Amended) A secondary battery according to Claim 13, wherein said electrolyte contains lithium perchlorate.

15. (Amended) A secondary battery according to Claim 10, wherein said vapor-phase growth carbon fibers are subjected to graphitization at a temperature of 2000°C or above.

16. (Amended) A secondary battery according to Claim 10, wherein a precursor of said carbon matrix is a synthetic resin.

17. (Amended) A secondary battery according to Claim 10, wherein a formulation amount of said vapor-phase growth carbon fibers is 30-90 weight %.

18. (Amended) A secondary battery according to Claim 10, wherein a formulation amount of said vapor-phase growth carbon fibers is 50-80 weight %.

19. (Amended) A secondary battery according to Claim 10, wherein said carbon-carbon composite material is subjected to graphitization at a temperature of 2000°C or above.

Please add new claims 20-22 as follows:

20. (New) A secondary battery electrode according to claim 1, wherein said vapor-phase growth carbon fibers are subjected to carbonization at a temperature of at least 1000°C.

21. (New) A secondary battery electrode according to Claim 1, wherein the carbon-carbon composite material is non-vitreous.

22. (New) A secondary battery electrode according to Claim 10, wherein the carbon-carbon composite material is non-vitreous.